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ABSTRACT

The advent of the "information age," and the electronic communication technologies that are part of it, was supposed to replace print. However, this has not been the case, as the amount of print materials being produced and read has increased along with the electronic equipment. Far from replacing established media and communication skills, new media often give them an extended lease on life. However, as technology changes, the definitions of literacy change, and those at the bottom of the literacy pyramid find themselves increasingly disadvantaged. Jobs that once required only good workers now demand reading instructions and using computers. As more and more people acquire basic literacy, the standards for rising above the lowest levels of society are raised. Higher and higher education and higher forms of literacy become the norms for entrance into elite groups. This phenomenon dashes hopes for "universal literacy," since the requirements of literacy continue to increase, but this does not mean that literacy efforts should be abandoned. Individuals still benefit from skill development; however, identifying wishful thinking ultimately facilitates progress. (KC)

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LITERACY LESSONS

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INTERNATIONAL LITERACY YEAR

The future of literacy and literacies of the future

by Kenneth Levine

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
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In one of his short 'Fictions', Jorge Luis Borges invites the reader to consider the implications of a truly comprehensive library. *The Library of Babel* is both physically and logically infinite: it holds not only all the books ever published in every language, but also all the draft versions ultimately discarded by their authors, together with endless volumes consisting only of nonsense syllables or complete gibberish. It contains every actual book and also every possible book. Borges imagines some of the bizarre consequences of this ultimate storehouse of information: scholars spending their lives in a fruitless search for a key or index with which to locate the relatively few volumes of value within the library: the spread of powerful mythologies and mysticisms based on the occasional fragments of intelligible text discovered in a mass of random characters: factions warring to the death over which of many minutely differing versions is the canonical text that they revere.

The context for the themes of *The Library of Babel* is the massive expansion during the twentieth century of the capacity of the communications channel for distributing printed information. It may be read as a general parable about the differences between 'information' and 'knowledge', and a warning that the increase of human knowledge is by no means guaranteed or automatic. Borges queries whether the massive proliferation of printed materials should be regarded as a blessing or a curse. Does a point come, he asks, at which the volume of circulating print, much of it competing or contradictory, overloads the intellectual institutions and frameworks available for organizing and synthesizing it?

Although it is ostensibly about books and traditional libraries, *Babel* examines the character of writing and print as a basic but highly complex information technology; within this technology, literacy self-evidently plays a central role. Among other things, Borges points out that the problems faced by the reader reflect not only the linguistic difficulty of the text to hand but the way that the text connects with the broader organization of knowledge. As printed materials accumulate, readers will need increasingly sophisticated maps and indexes, in addition to basic reading and writing skills, if they are to be able to refine the crude ore of printed information into precious knowledge.

Borges operates with literary metaphor and does not claim to offer either detailed forecasts or concrete remedies. Nevertheless, his surreal fiction highlights the importance of an understanding of how the technological, linguistic, pedagogic, economic and socio-political dimensions of writing and literacy interconnect. We must recognize that a full appreciation of these connections lies some way off, and that we remain at the moment merely at the stage of refining the questions that need to be asked, both about the future role of literacy in particular societies and also about its general development across the range of human cultures.

What happens to literacy when the number of non-literate people in a society begins significantly to diminish? Does this shift enhance or reduce the individual and collective value of the skills of those who are literate? Is the elimination of illiteracy in any society a feasible policy objective? Will literacy remain a skill in high demand in the labour market, or will considerations of social esteem be the main motivation for adults to take up tuition in the future? How will the advent of computers alter the place of 'traditional' literacies? Are we experiencing an 'information age' and seeing the beginning of the end of 'book literacy' and its at least partial replacement by computer-based skills? Are there universal answers to these questions or must each society be considered separately?

There is little doubt that the steady expansion of publishing activity of all kinds in recent decades provides the broad setting within which the highlighted questions must be approached. Unesco's figures for 1970-1985 (Table 1) indicate increases in both developing and developed countries in the consumption per head of 'cultural' paper (that is, newsprint and other paper for writing or printing). What is most striking about the statistics is that consumption in developed countries has continued to increase from already high base levels: the increase for non-newsprint papers is just under 60% for the period under consideration.

This sustained growth of the printed channel has occurred during the same period as the emergence and explosive development in the advanced industrial economies of information technologies based on electronics. The social and economic significance of the new communications industries and technologies has been widely debated, particularly through such ideas as the 'information economy' and the 'information society'.

TABLE 1. Consumption of paper for printing, kilos per inhabitant, 1970 and 1985

Region	Newsprint		Other printing and writing papers	
	1970	1985	1970	1985
Africa	0.9	0.6	1.1	1.8
Americas	20.9	21.5	22.9	32.8
Asia	1.5	1.9	1.9	3.5
Europe (including USSR)	9.6	10.3	14.8	22.0
Oceania	28.7	33.3	14.7	23.7
Developed countries	17.8	20.9	22.2	35.2
Developing countries	0.9	1.1	1.1	2.4
World	5.8	6.0	7.3	10.4

Source: Unesco. *Statistical yearbook, 1988*. Paris, 1988. (Tables 6.3 and 6.4.)

One strand in these discussions points out that although some of the crucial innovations have taken place in the developed world, the impact will very shortly be global; some of the new media such as satellite broadcasting are inherently indifferent to national boundaries, while most of the major communications enterprises are multi-national operations with extensive holdings.

How does this situation bear upon literacy and illiteracy? The first point that must be stressed is that a good deal of prediction and speculation about communications technologies is affected by a brand of thinking often termed 'technological determinism'. This incorporates the mistaken belief that new technologies are irresistible, quickly sweeping away all traces of their predecessors: it also rests on the assumption that technologies are almost completely autonomous forces, not subject to the constraints and demands of their host societies. The result is gross exaggeration in the scale, intensity and universality of technological change. It is this kind of thinking that has been responsible for half a century of unfulfilled forecasts about the imminent displacement of books and reading by broadcast media. It has also been responsible for the promotion of patently improbable developments such as the 'paperless office'; the reality is that most computer users spend their days engulfed by technical manuals and piles of paper print-out.

Far from replacing established media and communications skills, new media often give them an extended lease on life. The proliferation and the improving cost/performance characteristics of micro-computer systems have some positive implications for the dissemination of reading and writing skills. The capacities of word processing software to support the task of composing text will make it easier and quicker for children and adults to master authorship (though it must be said that the first generations of literacy software have been, with certain notable exceptions, uni-

maginative and mechanical). If access to word processors and 'desk-top publishing' systems continues to spread, a wide range of interest groups and social minorities which have hitherto operated only in a locality or region will have access to print and the possibility of conveying their messages in low-cost formats to much wider audiences.

There is a collection of other means of electronic information processing and communication which both enlarge the scope for applying basic literacy and which simultaneously transform it by imposing the need to understand new techniques and conventions. The use of electronic mail, videotext systems, communication via computer bulletin boards reached through telephone lines, retrieval of information from compact discs (CD-ROM) and remote computer databases, distance learning programmes using combinations of two-way radio, satellite, video-recorder and computer equipment, all these are developing at a rapid rate. One general feature of the new systems is that they are generally interactive and participative; this generally means that they provide some facilities for generating text and messages as well as receiving and consuming them, and it may well be the case that literacy programmes will have to scrutinize carefully the help they offer on what is simply referred to (more and more inadequately) as 'writing'.

But even these kinds of apparently direct impact can be altered by local circumstances. The character of the interaction between old and new systems is not uniform but dependent upon the societal setting and the cultural environment in which it is taking place. This challenges some of the established arguments that have been used to promote literacy activities and justify the expenditures that they entail. It has been claimed that the 'take-off' point for industrialization in an economy is indicated when a fixed percentage of the population reaches a level of basic literacy. Literacy has

The enormous range of potential applications for computers makes it likely that an element of re-definition will inevitably occur in respect of what is understood by 'basic' literacy. Familiarity with keyboards or other input devices could replace the pen or pencil, not as the most commonly available physical means of producing written texts, but as the accepted instrument through which literacy competence is established and tested in schools and other formal educational settings. Such shifts in the physical means of producing text are by no means unprecedented, but the advent of micro-computers is significant because their purchase and support will always entail relatively large expenditures (at least compared to pens and pencils!) with the resulting scope for increased national and international disparities in access to the newer variants of literacy.

been represented as an important prop for parliamentary democracy. It has been depicted as a necessary ingredient of rational thought and a support for the development of full individuality. Such generalized and far-reaching claims are not fully supported with detailed and impartial evidence. Beneficial social outcomes may certainly flow from improved literacy, but they cannot be relied on in every case and they are not automatic. It will be argued below that increased social and international inequalities are among its possible consequences. In the long run, confidence in the desirability of encouraging literacy will only be undermined if it is oversold by optimistic claims and promises.

As an example of the complex and locally variable manner in which literacy, technical development and the economy are inter-related, consider the way in which the demand for literacy is articulated and transmitted through the labour markets of a society in which industrial automation and electronic information technologies are being introduced. As a result of the new technologies, some semi-skilled jobs may incorporate basic literacy into their job descriptions for the first time; for instance, machine tools which are directly controlled by computers may require their operators to

be able to read messages from a visual display unit and enter information via a keyboard. In contrast, the introduction of office systems which enable typists to call up 'form-letters' from central storage and provide checks for spelling may reduce the need for individuals to possess the 'traditional' literacy skills of the secretary. Some work roles are 'enskilled' and have literacy added on to them, others are 'deskilled' and have it removed or reduced. The impacts of new technologies on literacy can be quite different in different parts of the labour market, in different industrial sectors, and in different phases of the process of modernization; any blanket prediction about outcomes is therefore likely to be, at best, an oversimplification.

The early signs of at least one very general impact can, however, be detected. The domination of the world market for advanced communications technology by manufacturers from a relatively small number of firms with headquarters based mainly in Europe,

Photo : Unesco/Dominique Cms

North America and Japan, has a subtle linguistic significance. Use of any advanced technology is usually greatly assisted by familiarity with one of the 'world languages' in which the bulk of scientific and technical interchange takes place. It may be the case, for example, that documentation and technical support is unavailable in the 'local' languages, placing a premium on some knowledge of a second language. The net result is an increase in the perceived utility of literacy in one of the major world languages; it is not necessarily the case that fluency in reading and writing in a local language will be correspondingly de-valued, but rather that the latter no longer represents the high point of all individual needs and ambitions. Pressure for literacy instruction in second languages will grow, especially among the technical elites of developing societies. This is one specific expression of the general problem of the retreating national and international targets for literacy, to which we will return below.

Just as the impacts of the new technologies on literacy cannot be understood solely by extrapolating technical possibilities, so neither can it be reduced to a matter of economics, i.e. the relative capacity of different technologies to deliver information in a cost-effective manner. Reading and writing are not merely practical skills that can be acquired for an asking price (or an opportunity cost) in an educational marketplace and subsequently exercised in a complete vacuum. These skills and their products (written texts and information) are closely embedded in both the political and the status systems of the societies in which they are institutionalized. Dealing with the political domain first, there are formal limits in every society on what can be legally published. Further control, sometimes operating through market mechanisms, sometimes through overt or covert forms of censorship, is universally exercised over which individuals and groups are encouraged (or permitted) to record their messages via authoritative and enduring media. Even where illiter-

The character and policies of a political regime create an environment that can have a major influence on the value of literacy within a society. This value will generally be greater, and will be popularly perceived to be greater, individually and collectively, where literacy is supported by an infrastructure consisting of, for example, a free press, uncensored books, public and reference libraries, liberal policies on the disclosure of official information, reliable postal services, and protection for consumers against misleading advertising. What is the value of being literate in the absence of these facilities and institutions? When it is asserted that literacy is a fundamental right, a form of empowerment, a means of human liberation, the presumption is being made that the supportive infrastructure either already exists or will develop alongside the programmes to expand basic and adult education. In too many cases, however, this expectation represents the triumph of hope over experience.

acy is a minor social problem, or where governments are actively engaged in major literacy programmes, access to print is never completely open or democratic, and the content of written media tends disproportionately to reflect the concerns and ideological outlooks of dominant social groups.

Photo: Unesco

The emphasis in many recent adult literacy programmes in various countries has been on the transmission of 'functional' literacy. This term has been used in many ways and has become rather elastic in its meaning, but it normally reflects an instrumental perception of reading and writing. That is to say, literacy is considered to be, first and foremost, a tool that can be used by people in their daily lives to assist them in work and other practical activities. While this is obviously a fundamental and universal aspect of literacy, it is not the whole story. The possession of reading and writing skills carries implications for the individual's social standing; in other words, it has a symbolic as well as an instrumental dimension. High levels of literacy, as judged by the standards prevailing in a particular culture, earn social status for the individual, while illiteracy attracts negative social esteem (or stigma). In the same way as the consumption of many luxury commodities is bound up with claims to social superiority, so some forms of literacy (such as novel and poetry reading, the authorship of books and articles, crossword puzzle solving, fluency in a second language) become part of the distinctive life-styles of groups which wish to maintain a degree of social exclusivity.

Serious problems arise because the status aspects of literacy interact with its function as the basis of the credentials which are the keys to selection for further and higher educational opportunities, and for secure and remunerative forms of employment. With the extension and improvement of schooling and adult literacy activity, levels of literacy tend gradually to improve. More people than previously are able to demonstrate an 'average' level of competence, and more also acquire a mastery of the special forms of

literacy that earn social prestige. As a consequence of such 'crowding', inflation takes place. A rise occurs in the minimum standards of reading and writing performance that are considered to represent barely acceptable competence, and this in turn pushes up the threshold of 'exclusive' forms of literacy.

The operation of this mechanism is revealed in the way that, for example, manual employees increasingly have to produce evidence of literacy where, in the past, a respectable record of previous employment would have sufficed. Higher up the educational ladder, the larger the number of candidates that possess qualifications, certificates and diplomas, the less the competitive advantage they confer on individuals. There is an analogy here with the situation of spectators at a sporting event: once some people stand on tiptoe in order to gain a better view, other are obliged to do likewise, everyone finishing up in their original relative positions. In the educational setting, some individuals will choose to invest in additional or more advanced certification in order to restore their competitive advantage, and this fuels a further round of inflation.

Here then we are confronted once more by the paradox of retreating literacy objectives. Owing to its status dimension, any general improvement in the societal standards of literacy will automatically disadvantage the least literate groups. Whoever is at the bottom of the literacy hierarchy, irrespective of the absolute level of their capacities and skills, will be relatively worse off from any general rise in standards in their society.

It is necessary to draw the inferences from all this with great care. In no sense should it be read as a philosophy of despair which denies the worth of literacy programmes and campaigns. Individuals will still benefit from raising their literacy skills and will still require effective assistance from trained and sympathetic helpers armed with appropriate materials. But there are finite limits to what is possible even with ample goodwill and resources. Identifying wishful thinking and questioning blanket optimism ultimately facilitates progress. This lesson will have been well learned if it serves as a reminder to workers in the literacy field that despite apparent similarities, there are fundamental differences between the world battle against illiteracy and the problems of dealing with epidemic diseases, to which it is often compared. There can be no fixed level of literacy attainment in any society that, once reached, will guarantee to the least literate parity of esteem and treatment with those that are more literate.

Illiteracy is a relative and dynamic condition, continually being transformed by expanding human information needs, new social arrangements and technical innovations. It is not susceptible to complete eradication and we must not hope to enjoy a decisive final victory over it. We can, however, combat it with ingenuity and an awareness of its continually evolving character.

Photo : Unesco/Dominique Roger

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The International Bureau of Education acknowledges with grateful thanks this contribution by Kenneth Levine to the cause of Literacy. Dr Levine is a professor in the Department of Sociology, University of Nottingham, United Kingdom.

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